GIANT BITE FORCE IN FUKOMYS MOLE-RATS (RODENTIA: BATHYERGIDAE).

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African mole-rats are chisel-tooth digging subterranean rodents. Digging large tunnel systems and foraging for geophytes requires an efficient jaw apparatus. We studied bite force in several species of the Fukomys radiation from the Zambezian region to assess the extent of variation in biting performance. Maximal bite force was measured using a Kistler isometric force transducer. Data were related to skull size and skull shape variation, which was estimated with landmark-based geometric morphometrical tools. Results: 1. we show that the giant mole-rat (*Fukomys mechowii*) not only has the highest absolute maximal bite force among *Fukomys* but also has the highest relative (to body mass) maximal bite force among extant mammals. 2. Maximal bite force measurements in cross-breeds between chromosomal species of the *F. micklemi* clade show a negative heterotic effect, larger animals producing the lower bite-force. 3. Interspecific comparisons among *Fukomys* show subtle but significant differences in cranial shape, which may help explain observed differences in maximal bite force between *Fukomys* species. Taken together our results therefore provide evidence that variation in the skull shape and likely in the whole jaw apparatus is present in spite of the thresholds set by the underground environment. Through such skull features a particular species may become better suited to a particular ~~environment,~~environment; hence changes in the form of the skull may have an adaptive value. Data are further discussed in the context of evolution of sociality.